

### ■ Features

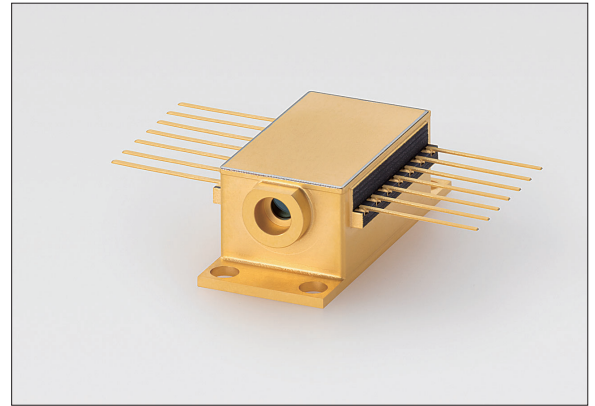
- Peak output power: >1 kW
- Wavelength: 1064 nm
- Pulse width: <0.9 ns
- Repetition frequency: 50 kHz
- Beam quality:  $M^2 < 1.2$  (TEM<sub>00</sub>)
- Butterfly package

### ■ Applications

- LiDAR
- Light source for analysis
- Seed laser

### ■ Outline

This is a compact size solid state laser head suitable for long range, high precision measurements. A high peak output of over 1 kW and a short pulse laser of 0.9 ns or less are available with oscillated at a high beam quality. Temperature control elements (peltier devices, thermistor) and photodiodes for monitoring pumped laser diode (LD) is also included inside the packaging.



### ■ Specifications

Parameter	Specification	Unit
Storage temperature *1	-10 to +70	°C
Operating ambient temperature (Under appropriate heat dissipation condition) *1	0 to +55	°C
Operating ambient humidity *1	+10 to +80	%
Place of use	Indoor, no direct sunlight	—
Thermistor	10 kΩ (T=25 °C), B=3455 K	—

\*1 No condensation

### ■ Absolute maximum rating

(T<sub>op(c)</sub> = 25 °C)

Parameter	Symbol	Value	Unit
LD forward current	CW	1.0	A
	Pulse	1.2 (peak)	A
LD forward current x Duty cycle (CW-equivalent)	—	1.0	A
Duty ratio	DR	80	%
LD reverse voltage	V <sub>r</sub>	2.0	V
TEC current *1	I <sub>tec</sub>	4.5	A
TEC voltage	V <sub>tec</sub>	6.1	V
PD reverse voltage	V <sub>RD</sub>	10	V
PD forward current	I <sub>FD</sub>	10	mA

\*1 When the TEC current is close to max, the cooling efficiency of the peltier element decreases due to joule heat.

To protect the peltier element and maintain stable operation, please use it with the I<sub>tec</sub> current less than about 60 % of the maximum rated value.

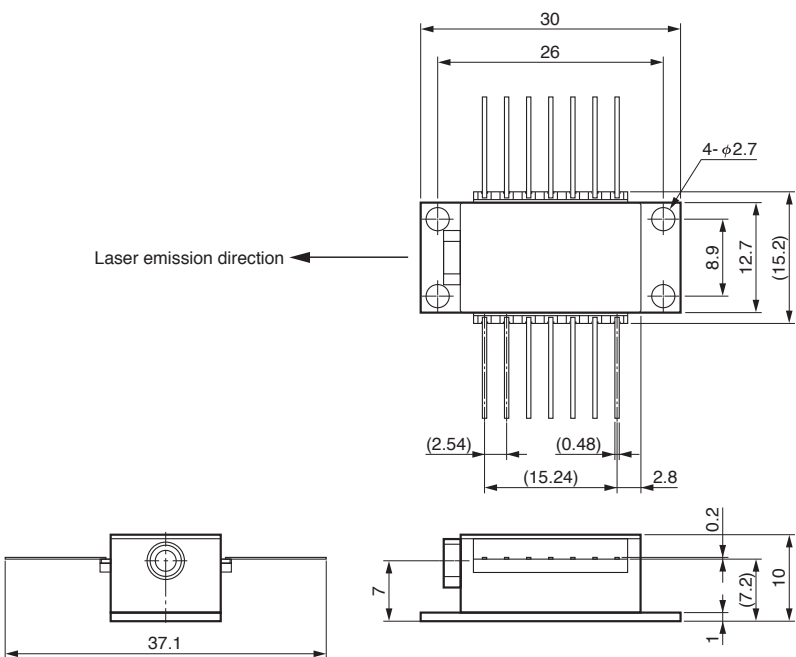
### ■ Electrical and optical properties

(T<sub>op(c)</sub> = 25 °C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
LD forward voltage	V <sub>f</sub>	I <sub>f</sub> = 1.0 A	—	2	3	V
Center emission wavelength	λ <sub>c</sub>	—	—	1064	—	nm
Pulse energy	E <sub>p</sub>	I <sub>f</sub> = 1.0 A	0.8	1	—	μJ/pulse
Pulse waveform	Repetition frequency	I <sub>f</sub> = 1.0 A	50	—	—	kHz
	Pulse width	I <sub>f</sub> = 1.0 A	500	700	900	ps
Beam quality	M <sup>2</sup>	I <sub>f</sub> = 1.0 A	—	—	1.2	—
PD monitor current	I <sub>PD</sub>	I <sub>f</sub> = 1.0 A, 100 Ω load	100	300	400	μA
PD dark current	I <sub>D</sub>	V <sub>r</sub> = 2.5 V	—	0.02	1	nA

# Pulsed Solid State Laser Head L14824-10101

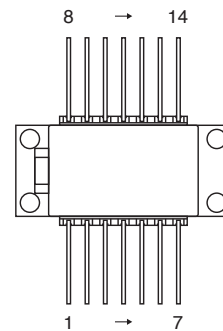
Figure 1: Dimensions (unit: mm)



\* Tolerances is by ISO 2768-1 m (medium) unless specified.

LDA7B73072

Figure 2: Pin connections



No.	Function	No.	Function
1	TEC (-)	8	NC
2	TEC (+)	9	NC
3	Thermistor	10	NC
4	Thermistor	11	PD (cathode)
5	NC	12	PD (anode)
6	LD (cathode)	13	NC
7	LD (anode)	14	NC

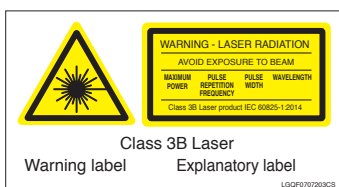
NC: Not connected

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## Warning (Class 3B Laser)

Invisible laser radiation: Avoid exposure to beams

The laser radiation emitted from this product is an invisible laser beam that cannot be seen by the human eye. This product falls within "Class 3B Laser" according to IEC 60825-1 laser product classification. Always comply with IEC 60825-1 safety standards when using this product.



- The laser emitting port emits both 1064 nm laser light and 808 nm excitation LD light.
- Be sure to wear laser protectors that are compatible with both 1064 nm and 808 nm wavelengths to prevent eye damage from laser light.

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